DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF:

CEPOH

1 October 2001
(Corrected 3 Oct 01)

Memorandum for Record

Subject: Responses to USEPA's comments on the Focused Feasibility Study and Proposed Plan for Remediation of PCB contaminated soils at Tanapag Village, Saipan, Commonwealth of the Northern Mariana Islands.

1. At this time, EPA cannot approve the preferred alternative identified in the PP. It is unclear to EPA whether a final FFS or PP will be prepared. EPA is less concerned with the preparation of a final FFS and more interested in the Army providing adequate and appropriate responses to EPA and public comments. EPA is also anticipating submission of a recommendation for treatment and disposal remedy from the Army, to be evaluated for approval according to Section VIII. 1.B. of the AO.

The U.S. Army Corps of Engineers (Corps or COE) intends to submit a letter requesting approval of our remedy selection to EPA in accordance with the RCRA 7003 administrative order. We will attach a responsiveness summary, which will address all substantive comments received on the proposed plan, and FFS, including those received from the public and the DEQ. We also plan to attach our draft ROD that will be staffed through DA channels for approval under DERP FUDS.

2. It would have been helpful to have a summary and/or conclusion section for the FFS and PP in order to focus the reader on the purpose and conclusions of the report and next steps in the process. At this point, the Army needs to clarify the process for remedy selection and approval, indicating that the Army recommends the proposed alternative and EPA approves pursuant to the AO. As written, the Army states that both the Army and EPA are selecting the remedy. To date, EPA has not been involved in the preparation of the FFS, PP or remedy selection. (PP, Introduction, page 1, line 9.) EPA requests that a process and associated schedule for remedy selection and implementation be submitted.

The remedy selection request (RCRA) / ROD (FUDS) will contain a summary of the process for remedy selection and execution. The remaining tasks, some of which may be performed simultaneously and not necessarily in this order, are:

- Address and review responses to comments received to date with the EPA
- Complete remedy selection request for EPA approval.
- Complete and submit ROD to HQDA for approval
- Release final decision to public
- Prepare remedial design for any necessary elements of final remedy
- Coordination meeting for Work Plan with EPA, ACE, ECC.
- Final Draft Work Plan submitted for approval.
- Mobilize to Saipan.

- Ship Treatment equipment to Saipan; assemble equipment and prepare equipment for operation.
- Conduct remedial action in consultation with EPA and CNMI until remediation goals are achieved
- Provide data to demonstrate completion to EPA, CNMI and the public
- Propose close out of project upon completion to EPA for approval
- Close out project.

3. EPA has concerns with some of the basic objectives of the FFS, which appear to impact the evaluation of the alternatives presented in the study. While we understand that the AO specifies treatment of the soil, EPA explained in correspondence to Helene Takemoto on Apri120, 2001 that the FFS should evaluate transportation, treatment and/or disposal alternatives for the PCB contaminated soil. EPA 's goal, which should be consistent with the Army's objectives, is to ensure that all soils identified to contain over 1 mg/kg PCB are properly treated and/or disposed of in a manner that complies with existing laws and regulations and protective of human health and the environment. The AO specification of treatment should not be used as a rationale to dismiss an alternative, since the AO allows for the proposing of an alternative methodology in Section VIII.l.8 . The Army needs to provide adequate analysis of the alternatives in the FFS. Statements such as the "alternative is contrary to the FFS preference for on-site treatment and the USEPA preference for permanent destruction of the PCBs" are unsupported. Provide supporting references and/or documentation or remove these statements from the FFS and PP.

The Corps has only considered technologies or solutions that would achieve treatment or disposal of soils contaminated with PCBs over 1 ppm. The FSS documents the rational for selecting for selecting the technology preferred in the proposed plan. The proposed plan was published to solicit public comment on the Corps' proposed alternative. These comments have been received and will be addressed in the responsiveness summary. Preferences for an onsite rather than offsite remedy and for treatment to reduce the toxicity, mobility, and volume of the contaminated material are expressed in the NCP and CERCLA.

4. Since CNMI and community acceptances are not covered in the FFS or PP, provide information on these criteria.

Reference the NCP, Sections 300.430(e)(9)(iii)(H) and (I), and 300.430(f)(3). CNMI and community' acceptance were captured through public comments. These comments will be included in the responsiveness summary attached to the remedy selection / ROD document. The criteria for addressing comments were presented at the July 11, 2001 public meeting by LTC Light. The Corps continues to communicate and address issues relating to implementation of the plan. The Corps has an in-place community relations plan to address on going comments. As the

remedial action is implemented, USACE will continue to provide information on the remedy to CNMI and the public.

5. Although not covered in the FFS and PP, prior to granting approval on a final remedy, ACE needs to provide more information on the location of the proposed treatment/disposal alternative. EPA requests for ACE to conduct and submit an investigation of site alternatives in the event that a treatment system or on-island disposal remedy is recommended by ACE. This investigation should include at least four potential locations and address the feasibility of each site.

We have evaluated three locations for siting the treatment system: Marpi, the DPW lower base yard, and the cemetery 2 site. The cemetery 2 site is preferred since its use eliminates spill risk and is the most cost effective. In addition, use of that site creates less public safety hazard related to traffic, presents no residential exposure during remediation, offers the availability of adequate utilities, and is currently available to USACE under an access agreement. The remedial design will establish the final details concerning the location, preparation and implementation of the work at the remedial action site.

The Marpi site is less feasible than the cemetery site because it is too remote. The closest utilities, i.e., water, electricity, and telephone, are located one half mile away from the Marpi site. There are also several thousand yards of dredged material stockpiled on site. Excessive time and cost would be required to develop the site to use the ITD unit. Use of the Marpi site would also require trucking all of the contaminated soils from the current storage area, which poses safety and logistical hazards.

The DPW lower base yard site was not chosen primarily because of heavy foot traffic and local use of the nearby area. Many people are present near this site every day and much commercial and government activity is ongoing in close proximity to it. The haul routes from cemetery 2, where the stockpiles are located, to the lower base yard, are inadequate for the project purpose. The road is partially paved, contains numerous potholes, and floods during heavy rains.

We looked for but could not identify a fourth site that met the project needs.

6. In order to adequately assess the alternative presented in the FFS and PP, characterization of the soil/waste streams to be treated and/or disposed is necessary. There is no information on PCB concentration of the soils, any other possible contaminants or a characterization of the matrix. PCB soil concentration may effect treatment/disposal alternatives. Analytical sampling of soil stockpiles provided to EPA separately is inadequate for consideration of treatment technologies. Also, without knowing parameters such as particle size distribution, TOC, BTU value, % moisture etc. and some idea about

how homogeneous these values are it is difficult to properly evaluate alternatives. Provide a more complete discussion of soils/waste streams and include in the assessment of the various alternatives.

Specified parameters were assumed as 7% fines, 18% moisture, 300 BTUs per pound, and 5,000 ppm TOC for all technologies evaluated. Available data from the removal actions provided adequate information for the alternatives analysis presented in the proposed plan and FFS. The Corps believes that these values are consistent with the site conditions. Soil characterization was adequate to evaluate the alternatives and to support selection of the proposed remedy. Chemical characterization of the PCBs was adequate for evaluation of the alternatives. Any additional data will be used to refine the remedial process rather than for remedy selection. If the basic performance criteria of attaining 1 ppm residual PCB could not be met by an alternative technology, additional data was not and will not be sought to further evaluate that alternative because it does not satisfy the cleanup criteria on its face.

We used TCLP, a standard test to determine whether a media is hazardous waste, to test the stockpiles. We consider TLCP to be adequate to do our baseline survey of the stockpiles. The results of the TCLP demonstrate that the stockpiled soil has no leaching metals and therefore is not hazardous waste. We agree that we need to perform additional testing of the stockpiles to identify any contaminants that may need to be considered and tested for during the POP test. As discussed between EPA and the COE, we will perform this additional stockpile testing prior to operation of the ITD unit.

7. In general, the document lacks a discussion of sampling of the soil and/or residuals. Although the details of such sampling would be reserved for a work plan, each alternative evaluated has differing levels of analytical requirements, which relate to implementability and cost. Provide a discussion and accompanying cost estimates for analytical requirements associated with each alternative retained for evaluation.

The Corps considered analytical costs in determining the treatment alternative cost estimates. See FFS table 2.

8. EPA is concerned with the effort put forth by the Army for evaluation of technologies which have not been proven effective, while other technologies which are more promising have either not been evaluated (e.g., thermal well) or discarded from consideration for unsound rationale (e.g., BCD, SET). EPA requests for the Army to adequately evaluate these alternatives prior to making a treatment/disposal recommendation to EPA.

The Corps considered technologies according to the effectiveness of treating PCB contamination, implementability, and cost. BCD and SET technologies were

evaluated following this standard rationale, which justified their elimination from further consideration. Research into these technologies included past project data and vendor literature. The Corps is not aware of proven cases that show thermal wells to have been used on excavated soils, and that they achieved the 1 ppm PCBs standard.

Our general response to DEQ's general comment, and specific response to DEQ's specific comment on BCD, is reprinted as follows:

The four chemical processes that were considered for treatment of the ITD residuals were rejected because it has not been demonstrated that these methods are capable of destroying PCBs to meet the remediation goal. The purpose of a focused feasibility study is to limit the comparative analysis of alternatives to those alternatives that have successfully achieved commercial application in the marketplace, not to conduct production level pilot tests of the type necessary to establish whether the post ITD treatment method will meet the remediation objective.

Base-Catalyzed Dechlorination (BCD) is very effective for PCB contaminated liquids but will not be effective on the filter cake that is the residual from the ITD process. Application of the BCD process to the filter cake may increase the volume of the filter cake by a factor of ten. This will result in 4000 ton of residual material that must be disposed of rather than 400 tons. Additionally, the BCD treated residuals will be very oily and asphaltic and unsuitable for disposal on Saipan. If this material cannot be disposed of on Saipan it will require transportation and disposal on the Mainland.

Use of the BCD process will require a pilot study performed in Saipan on the residuals from the ITD process applied to the stockpiled soil to insure that the 1 ppm remediation object can be met. In summary, Alternative 4D was rejected, as were the other three options that proposed a chemical treatment process be applied to the 400 tons of ITD residuals, because none of the chemical treatment methods have been pilot tested. It makes no economic sense to propose a treatment method, which must be pilot tested in Saipan, before it can be utilized. The cost of conducting a pilot test in Saipan, the extra time required to conduct the test, combined with the very real potential for the test to fail, make the application of BCD unacceptable from a cost and timeliness perspective.

Please see the Corps' response to DEQ for additional information on SET (3 Oct 01).

The single biggest impediment to using these technologies is that they are not compatible with this ITD unit and they would not effectively deal with the process

byproducts. Neither SET nor BCD has achieved 1 ppm for remediation of PCBs in the type of soil or matrix found at Tanapag Village.

For these reasons, these technologies are not protective of human health and the environment, and do not meet the ARARS. Since they fail the two threshold criteria under the National Contingency Plan (NCP) and CERCLA, we eliminated them from further consideration.

9. The FFS does not appear to address mobilization costs and shipment of hazardous and non-hazardous materials to Saipan. Clarify and provide information on mobilization and transportation of cargo to Saipan.

The ACE contractor prepared the cost estimates, which included shipment costs. This information was factored into the cost estimates of alternatives, which was included in the summary cost estimate table in the FS. See FFS Table 2.

SPECIFIC COMMENTS OF FOCUSED FEASIBILITY STUDY

A. FFS Section 2.2, Surplus Electrical Equipment, page 2-1 and PP Site Background, page 2, third paragraph: EPA ' s TAT did not actually remove the capacitors but provided technical assistance to DEQ. It was DEQ who did the actual removal. Also, the two capacitors were removed from the village in 1989.

Noted. The available records from the 1988 to 1990 discovery of capacitors on the Island and subsequent response actions are incomplete and not clear as to the origin, location, or condition of all the capacitors, or precisely which entity took which actions. If EPA has historic records providing further evidence of the details of these activities, we request that they be furnished to USACE and we will add them to the Administrative Record file for the project.

B. FFS Section 4.2, ARARs, page 4-1 and Chapters 7 & 8, compliance with ARARs evaluations: The list of ARARs is incomplete. Not all federal and CNMI ARARs were identified by the Army. Not an (sic) TSCA requirements were identified. Location, chemical and media specific ARARs were not identified.

B.1. All ARARs associated with the evaluated alternatives should be included. In general, the lack of complete identification of all ARARs may compromise a complete and correct evaluation/comparative analysis of alternatives. Provide a more complete identification of alternatives so that a more credible evaluation/comparative analysis of alternatives may be conducted. If an ARAR is applicable to a

specific alternative, so state. Also, provide a more detailed discussion of compliance with ARARs in the evaluation of each alternative.

The Corps evaluated chemical, location, and action specific ARARS for PCB contaminants. We did not identify any chemical or location specific ARARS but we identified TSCA as an action specific ARAR at section 4.2 of the FFS. The EPA Order does not identify any other specific sections of laws or regulations that are applicable to the work, and it does include a specific cleanup goal for the remedial action. USACE believes we have satisfied the requirements of Section 121 of CERCLA regarding identification of ARARs for the purpose of our FUDS/CERCLA action.

This remedial project will comply with the substantive standards of all laws and regulations that apply (i.e., are enforceable) to work done on it. During the onsite work, we will comply with substantive standards promulgated under the Clean Air Act, the Clean Water Act, the Toxic Substances Control Act, and the Occupational Safety and Health Act. Once the project work moves off site, we will comply procedurally and substantively with Department of Transportation regulations, the Resource Conservation and Recovery Act requirements applicable to the PCB contaminated residuals, and any other statutory or regulatory requirement applicable to this remedial action.

Our contractor is working closely with the CNMI DEQ to assure that we understand CNMI substantive standards. We will meet these standards, even if not enforceable against the United States, if technically feasible. For example, pursuant to consultation among ECC, the CNMI Commonwealth Utilities Commission (CUC), and the DEQ, it appears it will be necessary to install a well to draw brackish water from the tidal aquifer in order to operate the ITD unit. Use of this non-potable water will avoid an adverse impact on the community's drinking water supply. ECC is working with DEQ to provide DEQ the information required in the CNMI well development process and to install the well in compliance with CNMI standards, as long as these are reasonable and technically feasible. ECC advises the Corps that its consultation thus far with the DEQ on this issue has been productive and reasonable, and has reported no technical concerns in complying with CNMI's well development standards.

The project will comply with applicable Clean Water Act standards.
Water is involved in the treatment process. Some of that water will be in contact with the PCBs and will become contaminated. This contact water will be polished with activated carbon to remove impurities. After the contact water is cleaned, it will be used to re-hydrate the treated soils to the same moisture content present before treatment. This water will not be released to a surface water body. The non-contact water will be used to cool the contact water through a metal heat

exchanger in a way to prevent the two types of water from touching each other. The non-contact water is clean, but the level of dissolved salt is higher. This water may be discharged through a discharge drain periodically, and when discharged it will recharge the brackish aquifer. It will not be discharged to a sewer system or publicly owned treatment works. ECC is working with the DEQ to assure that this discharge complies with any applicable federal NPDES standards, and with technically feasible and reasonable CNMI equivalent standards. Again, ECC has not indicated any impediment to achieving compliance with CNMI equivalent standards.

With regard to air emissions from the ITD unit, ECC has been implementing federal Clean Air Act standards in preparing for the treatment process, since the unit produces process vapor. The vapor will be measured before it is emitted. The CNMI has not yet identified or cited CNMI clean air standards in its comments on the proposed plan; however to the extent these exist and apply, we will comply with them in the ITD treatment process. If they are not strictly enforceable, we will work with DEQ to meet these standards if technically feasible.

We are also working with DEQ to address their concerns and meet the technically feasible requirements of the CNMI's earthmoving and erosion control programs. DEQ worked with us during the removal action and the construction of the stockpile cells and berms to inform us about local site conditions and to identify and address CNMI concerns in these areas. We believe that DEQ and the Corps and its contractors are committed continuing to this cooperative effort through the remedial phase of this project.

We agree that substantive compliance with the applicable standards of the federal statutes discussed above is required. However, the requirement for substantive compliance with these standards does not make these standards ARARS. The designation of ARARS creates enforceable legal obligations under CERCLA Section 310; ARARS should not be identified unless clearly appropriate.

Reference CERCLA 121(d), 40 CFR 300.400(g) and 300.515(d)(1) and (h)(1). The only chemical or constituent of concern (COC) is PCB 1254, although the treatment process we have selected for approval will reduce all PCBs that may be present in the soil to below 1 ppm. CERCLA 121(d) states that the purpose of ARARS is to address the "degree of cleanup" for the hazardous substance of concern when it will remain on site at a level above the pre-release conditions. The ARARS must pertain to a specific COC or to the circumstances of its release. It must be a federal environmental statute, a more stringent state environmental or siting law, or a promulgated regulation that is legally applicable or relevant and appropriate to the circumstances of the release.

The Tanapag PCB cleanup involves the hazardous substance PCB 1254 and the circumstance of its release is spills from transformers into the soil. TSCA

regulations establish standards for responses to releases of PCBs to soils. We have used an EPA directed cleanup level that exceeds TSCA levels for soil excavation. We are using an EPA directed treatment standard for the treatment end product that meets or exceeds TSCA standards. We have identified the TSCA standards as the ARARS.

C. FFS Section 6.1, General Description of the Technology Types, Soils Washing, page 6-2: While EPA agrees that this method may not be effective for treatment of PCBs due to the lack of solubility of PCB in water, this discussion does not adequately describe the issues with this technology. The reasoning used to eliminate soils washing could have just as easily be applied to thermal desorption residuals. Provide an adequate and appropriate explanation for the removal of this method as an alternative, or present an evaluation of this alternative.

PCBs are not soluble in water; therefore, PCBs are not readily removed from soil through soil washing with water. Treatment of residual soil using soil washing will not achieve the 1-mg/kg cleanup level. For this reason, soil washing was eliminated in the initial screening as not effective.

D. FFS Section 6.1, General Description of the Technology Types, Solidification/Stabilization, page 6-2: As in the method discussed above, the rationale for elimination of this alternative is inconsistent and/or incomplete. It is unclear why the technology is dismissed if it effectively reduces mobility and bioavailability. The rationale that it doesn't comply with the "treatment standard" because contaminant mass is not reduced nor PCBs destroyed, could apply to the off-site shipment method as well. Provide an adequate and appropriate explanation for the removal of this method as an alternative, or present an evaluation of this alternative.

This process would effectively stabilize the material but would increase the volume at least 30 - 60 percent. Dilution is not an appropriate technology for treatment of TSCA regulated contaminants. This process is contrary to the ARAR and was therefore eliminated from further consideration as a remedial alternative.

E. FFS Section 6.1, General Description of the Technology Types, Solvent Extraction, page 6-2: It is unclear to EPA why the Army states that mass reduction is required as an ARAR, especially since the only ARAR listed in the FFS was 40 CFR 761.61. Provide an adequate and appropriate explanation for the removal of this method as an alternative, or present an evaluation of this alternative

The paragraph should have read that this alternative does not meet the statutory preference for reduction of volume. However, ACE eliminated solvent extraction because of the uncertainty of the technology to meet the cleanup objective of 1ppm. Further, this alternative is cost prohibitive.

F. FFS Section 7.1, Evaluation Criteria, page 7-1: It is unclear why the 5th paragraph regarding the specifics of shipping of PCB-contaminated materials is included in the section on evaluation criteria. Please clarify

Shipping costs are relevant to cost considerations. The Covenant between the US and the Commonwealth of the Northern Mariana Islands specifies federal law that applies to US agencies implementing federal actions in the CNMI. Section 502(b) of the Covenant provides:

(b) The laws of the United States regarding coastal shipments and the conditions of employment, including the wages and hours of employees, will apply to the activities of the United States Government and its contractors in the Northern Mariana Islands.

Therefore, when an agency of the United States conducts a US activity in the CNMI that is funded with US dollars, the US coastal shipping laws apply. This shipping-related requirement needs to be retained in the analysis because it is important for the evaluation of cost and implementability of some of the alternatives.

G. FFS Section 7.2, Detailed Analysis of Alternatives, 7.2.1 Alternative 1: No Action, pages 7-2&3 and PP Remedial Alternatives, Alternative 1: No Action, page 6: EP A believes that this alternative may be consistent with 40 CFR 761.61(a)(4) and would require this alternative to meet the requirements of TSCA, 40 CFR 761.61(a)(7) and (8). Monitoring, maintenance and associated costs needs to meet these requirements. Revise this evaluation accordingly. Clarify why the Army does not believe that this alternative meets TSCA.

The NCP at 300.430(e)(6) mandates the evaluation of the no action alternative in the FS process as a baseline. Because the materials had already been excavated under the time critical removal action and placed in a temporary storage area not intended for permanent disposal, a true no action alternative was no longer viable. Simply leaving the temporary storage area with materials that exceed the limits of the EPA order is not acceptable to USACE, and presumably also not to EPA. The no-action alternative we discussed in the FFS was not a true no action alternative. We should have discussed a no cost, no action alternative rather than No Action with institutional controls. We evaluated off site encapsulation rather than on site encapsulation for the encapsulation alternative because the community has always and consistently required that the contamination be removed from their village. Further, there are tsunami inundation and project size constraints associated with an on site encapsulation alternative that eliminated it from consideration.

H. FFS Section 7.2, Detailed Analysis of Alternatives, 7.2.2 Alternative 2A: Off Site Disposal, pages 7-4&5 and PP Remedial Alternatives, Alternative 2A, page 7: In general, due to limited information

provided, it was difficult to conduct a complete evaluation of this alternative. Although we realize that an FFS is not meant to provide a detailed work plan, since the off -site transportation and disposal of PCB-contaminated material is involved in two of the evaluated alternatives, including the preferred alternative, EPA is interested in having more information prior to making a decision on the Site remedy. Issues necessary to resolve which could present barriers to implementation of the alternative or impact the estimated costs are the importation of soils outside of the continental U.S. and the storage capacity and storage regulations for PCB-waste at the interim holding facility in Guam. For instance, the following issues need to be considered:

i) The USDA requires that the party receiving soil from outside the continental U.S. obtain certification from the USDA allowing them to do so. This certification must be obtained prior to shipment of soils; a copy of the certification must accompany every shipment. This requirement needs to be addressed in the evaluation of this alternative. The lack of certification could disbar some potential disposal facilities from accepting the waste and impact disposal cost. Clarify whether the facility(s) being considered for disposal of PCB- contaminated soils have USDA certification to receive soils from outside the continental U.S.

ii) The FFS states that the contaminated material would be shipped weekly to Guam and stored until shipped out on a monthly basis to the U.S. mainland. There are no detailed descriptions of any requirements, costs, procedures for shipping, storing, and transferring the soil as it enters Guam. It is not clear if the Government of Guam has been consulted with respect to the issue of allowing PCBs to be transported through its territory. Lack of consultation may result in Government of Guam refusal of the transport/transfer of PCB contaminated soils through its territory. Another potentially problematic issue is the storage capacity at or near the receiving/transfer port in Guam for waste pending trans-shipment to the U.S. Also, the regulations governing conditions and permissible length of storage need to be addressed. These items could significantly impact the process and cost of shipping the waste from Saipan. Provide a more detailed description of the aforementioned issues.

iii) As there is no breakout of the portion of transportation allocated to sea versus land shipping segments it is difficult to evaluate this line item. A major variable that could impact this line item is costs associated with off -loading, storing, and re-lading the waste in Guam pending shipment to the U.S. Clarify whether cost estimates are inclusive of all routes of transportation and temporary storage of material.

The logistical difficulties with shipping 20,000 tons of PCB contaminated soil are very significant. We would need to barge about 1500 containers of contaminated soils from Saipan to Guam. The Guam EPA has indicated in its comments on this project's FFS and proposed plan that it is not amenable to the prospect of addressing the management, handling, and storage of this quantity of contaminated soil on Guam or in its harbor facilities. We would need to obtain the necessary Guam permits to transit these soils through Guam. In fact, because of the quantities of soil and the time involved, we would need to obtain a TSCA storage facility on Guam.

If we could surmount the substantial problems with bringing this material through Guam, we would ship the soil to the US mainland for final disposal. Obtaining permits and permission to bring this quantity of soil into a US mainland port would also be difficult, in part because of the sheer quantity of the soils. In addition to working out consent to enter a port, we would need to obtain a US Department of Agriculture permit to bring the soils into the US. This would require a significant testing effort and protocol to assure the USDA that the soils did not contain prohibited microorganisms or other threats to US agriculture. In addition to the USDA requirements, once we sent this material off the Tanapag site, we must test each container (say 1500 containers) in accordance with DOT regulations. If the material tests less than 50 ppm, we would send it to RCRA permitted landfill. If it tests above 50 ppm, we would have to send it to a very costly TSCA permitted landfill.

For all of these reasons, the shipping logistics between Saipan and Guam and Guam and the US mainland would be very time consuming and costly to work out. This alternative would require much more funding that we have or than we may be able to obtain through the FUDS program. It would also take an unreasonable amount of time to execute this alternative.

I. FFS Section 7.2, Detailed Analysis of Alternatives, 7.2.3 Alternative 2B: Off Site Encapsulation, pages 7-6 thru 9 and PP Remedial Alternatives, Alternative 2B: Off-Site Encapsulation with Stabilization, page 7:

i. Implementability (FFS, page 7-8): Provide a map with the location and dimensions of the "area once occupied by Naval Operating Base, Tanapag, Aviation Gasoline Tank".

ii. If there are CNMI permitting requirements, they should be mentioned in the section on ARARs.

iii. It is unclear why compliance with the AO schedule is mentioned for this alternative since it appears that none of the alternatives will be able to meet the schedule of the current AO.

iv. Cost, page 7-8: What is the time period assumed for O&M costs?

v. PP text says "if a suitable site can be located on site." This should be "on island" not "on site". Correct this mistake in all appropriate locations

A map with locations and dimensions is not necessary for this document. CERCLA governs the permitting requirements or lack of them; our opinion on the non-applicability of the CNMI regulations has been transmitted to the CNMI government.

Concur that reference to the AO schedule should not have been made. O&M costs assume a 30-year period. We intended the term “on site” to accord with CERCLA.

The reference to the former Tanapag Naval Operating Base area was speculative and should have been omitted. In fact, the FFS stated that “(t)here may be suitable locations elsewhere in Saipan as well.”

Please see the response to Specific Comment B. above.

J. FFS Section 7.2, Detailed Analysis of Alternatives, 7.2.4 Alternative 3A: On-Site Treatment by Thermal Blanket and Thermal Oxidation, pages 7-9 thru II and PP Remedial Alternatives, Alternative 3A: On-Site Treatment by Thermal Blanket and Thermal Oxidation, page 7-8:

i) What is the estimate of PCB contaminated material that will need to be disposed of utilizing this alternative?

ii) Reduction of toxicity, mobility or volume, page 7-10: The FFS states that the "process successfully treated 1,181 tons of PCB contaminated soils from an initial concentration of 10,000 ppm to I ppm. i, Review of the Final Project Report , Phase II, Sept. 22, 1999, Page 40-41 indicates the 1,181 tons included soil treated to less than 10 ppm but greater than 1 ppm. The report States "A total of 1,181.20 tons of contaminated soil were treated utilizing the thermal desorption system. However, three soil batches (batches 21 through 23) contained PCB contamination greater 10 ppm..." Clarify these discrepancies.

In addition, the discussion of the thermal blanket technology neglected the problems associated with implementing the alternative due to its large electricity power requirements, frequency of brownouts on the island and issues with high humidity and moisture. The Phase II Report indicates that "the slow progress of the thermal blanketing technique was considered incompatible with the project's scheduling constraints...off-site (disposal) was chosen as the preferred remediation method to complete the project". The discussion needs to be revised to provide a more complete evaluation of this alternative.

An estimated one-percent of the total volume of soil will be disposed of as PCB contaminated waste. The Corps will review the discrepancies. The thermal blanket process was able to achieve the performance standard of 1 ppm. The Corps agrees that the slow progress of the technology was the reason for the off-site disposal decision. The price of treatment reflects the slow process and is significantly higher than was contracted for during Phase II of the project.

6A. FFS Section 7.2, Detailed Analysis of Alternatives, 7.2.5 Alternative 3B: On-Site Treatment by Incineration, pages 7-11 and 12 and PP Remedial Alternatives, Alternative 3B: On-Site Treatment by Incineration, page 8: Production and control of dioxin/furans needs to be included in the evaluation of this alternative.

TSCA is the ARAR and defines emission controls for incineration of PCB contaminated materials. Controls for dioxins/furans are achievable under normal operations, which are expected.

Page 6. B. FFS Section 7.2, Detailed Analysis of Alternatives, 7.2.6 Alternative 4A: On-Site Treatment by Indirect Thermal Desorption and PCB Destruction by Fenton's Reaction, pages 7-12 and PP Remedial Alternatives, Alternative 3B: On-Site Treatment by Indirect Thermal Desorption and PCB Destruction by Fenton's Reaction, page 8-9: Clarify the final status of the Fenton's Reaction alternative. The documents seem to contradict itself in that it dropped Fenton's as an onsite alternative, but said it should still be retained as an option to offsite disposal of Indirect Thermal Desorption residuals if future bench scale test can be shown to work. Is there a plan for bench scale testing of Fenton's? Clarify.

We have eliminated Fenton's Reaction as an alternative because we have not been able to determine that it is implementable, effective, or cost effective. Off-island shipment of the treated residuals that exceed the cleanup criteria is still the preferred alternative.

Page 6. C. FFS Section 7.2, Detailed Analysis of Alternatives, 7.2.6 Alternative 4B: On-Site Treatment by ITD and PCB Destruction by Solvated Electron Technology, pages 7-15 thru 17 and PP Remedial Alternatives, Alternative 4B: On-Site Treatment by ITD and PCB Destruction by Solvated Electron Technology, page 9: If the feed rate is typically less than one ton of material per day, and there is approximately 400 tons of treated material generated for destruction, it is unclear how this action will be completed in 3-6 months. Clarify and correct this discussion.

Noted. At the project rate of production of the SET system, treatment of 400 tons would take about 15 months.

Page 6. D. FFS Section 7.2, Detailed Analysis of Alternatives, 7.2.10 Alternative 4E: On-Site Treatment by ITD and Off-Site Disposal, pages 7-21 thru 23 and PP Remedial Alternatives, Alternative 4E: On-Site Treatment by ITD and Off-Site Disposal, page 11: See discussion provided for Alternative 2A.

i. USDA requirements are not applicable to filter cake from the ITD as this is an industrial process residue that has undergone thermal treatment at 900 degrees Fahrenheit.
ii. The transportation plan addresses these issues.
iii. We will be shipping 400 tons of filter cake rather than 20,000 tons of contaminated soils.

Page 6.E. FFS Section 7.3, Alternatives Retained for Comparative Analysis, page 7-23: The AO requires that USACE "perform a laboratory scale investigation of the feasibility and practicability of

using Fenton's Reaction in Saipan." This was based on a determination by EPA that Fenton's Reaction has not been demonstrated to be an effective technology for treating PCBs. The AO does not require other treatment processes as explained in the FFS. Therefore, the rationale for discarding Alternatives 3A, 4B, 4C, or 4D based on the fact that USACE has not performed laboratory testing is unsupported. Alternative 3A had been utilized in Saipan with limited success and would therefore not be recommended to retain as an alternative. Clarify why the Army believes that the processes for alternatives 4B, 4C and 4D have not been proven to be capable of achieving the treatment standard. For processes which have been proven to meet the treatment standard, conduct comparative analysis.

Treatment processes attached to the ITD need to be performed with the matrix created by the ITD. This matrix is a wet solid with high organic matter. The processes that were evaluated focused on the processes' abilities to manage this waste matrix. Experiences in managing this matrix were also evaluated. The comparative analysis in the FFS did address the performance issue. We agree that we do not have data on Fenton's Reaction, see item B above. We do not have data on the four alternatives cited and therefore we eliminated them from further consideration.

Page 6. F. PP Summary of Site Risks, page 4-5: This entire section could benefit from editing. Correct errors and provide clarification of information.
PP Summary of Site Risks, Human Health Risks, page 5, first sentence: 1 x 10-4 corresponds to a one in ten thousand risk, not one in one hundred thousand. PP Summary of Site Risks, Human Health Risks, page 5, end of second paragraph; Concentration and risk are proportional, but are they linear? A risk of one in a million from soil concentrations of 0.22 ppm does not necessarily mean that soil concentrations of 1 ppm yield a risk of five in a million. Clarify.

Noted. Addressed in our responses to DEQ's comments.